

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 January 2005 (27.01.2005)

PCT

(10) International Publication Number
WO 2005/008744 A3

(51) International Patent Classification⁷: **H01L 21/20**,
51/40

(21) International Application Number:
PCT/GB2004/003016

(22) International Filing Date: 9 July 2004 (09.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0316395.3 12 July 2003 (12.07.2003) GB

(71) Applicant (for all designated States except US):
**HEWLETT-PACKARD DEVELOPMENT COM-
PANY, L.P.** [US/US]; 20555 S.H. 249, HOUSTON, TX
77070 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **RUDIN, John,**
Christopher [GB/GB]; 85 Kennington Avenue, Bristol
BS7 9EX (GB).

(74) Agent: **MARSH, David, John**; Hewlett-Packard Limited,
Intellectual Property Section, Filton Road, Stoke Gifford,
Bristol BS34 8QZ (GB).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

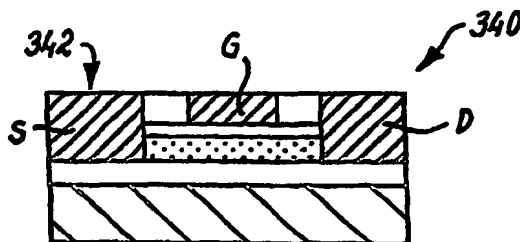
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
7 April 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: A TRANSISTOR DEVICE WITH METALLIC ELECTRODES AND A METHOD FOR USE IN FORMING SUCH A
DEVICE



(57) Abstract: A transistor device having a metallic source electrode, a metallic drain electrode, a metallic gate electrode and a channel in a deposited semiconductor material, the transistor device comprising: a first layer comprising the metallic gate electrode, a first metal portion of the metallic source electrode and a first metal portion of the metallic drain electrode; a second layer comprising a second metal portion of the metallic source electrode, a second metal portion of the metallic drain electrode, the deposited semiconductor material and dielectric material between the semiconductor material and the metallic gate electrode; and a third layer comprising a substrate, wherein the first, second and third layers are arranged in order such that the second layer is positioned between the first layer and the third layer.

WO 2005/008744 A3